

EMPHATIC CONSONANTS IN SEMITIC

AHARON B. DOLGOPOLSKY

1 "Emphatics" is the conventional nomenclature of the uvularized consonants in Arabic (ط, ق, ص, ض, ظ) and their etymological counterparts in other Semitic languages: Ethiopian glottalized ejective *t, k, s, ʃ*, Hebrew, Phoenician, and Aramaic *ṭ, q, ṣ, ṣ, ṣ*, Ugaritic *t, k, s, ʃ*, Akkadian *t, k, s*, Ancient South Arabian *t, k, s, ʃ, ʃ*. What was the real pronunciation of the "emphatics" in ancient Semitic languages (Hebrew, Phoenician, Ugaritic, Old Aramaic and Syriac, Ancient South Arabian, Akkadian, etc.) is a debatable question. The same is true of Proto-Semitic.

Let us consider the available evidence for the nature of the Proto-Semitic emphatic consonants and try to solve the problem.

In the living Semitic languages which still maintain the opposition of emphatic vs. non-emphatic consonants the emphatics have three different pronunciations:

1. In Arabic the "emphatics" are pronounced as uvularized¹ consonants. Uvularization is the modification of consonants or vowels by moving back the rear part of the tongue towards the uvula and the back wall of the pharynx.

2. In the Ethiopian Semitic languages the "emphatics" are actualized as glottalized ejectives, i.e. as consonants pronounced with closed glottis. The oral stop and the closed glottis produce a closed cavity, and then the front (oral) stop is released by compressed air of the mouth-and-throat cavity, produced by pressure from the rising larynx.

Glottalization (as actualization of the "emphasis") is attested also in Modern South Arabian and in some Eastern Neo-Aramaic dialects, such as Urmian Nestorian Neo-Aramaic ("Neo-Assyrian") and Kurdistani Jewish Neo-Aramaic.²

3. In some other Neo-Aramaic dialects (e.g. Ṭūr-'Abdīn) the opposition of "emphatic" and "non-emphatic" voiceless consonants is actualized as an opposition of non-aspirated vs. aspirated consonants.²

¹ I prefer to call it 'uvularization' and not 'velarization' (which is obviously wrong, because even the velar *k*, when emphasized, becomes uvular) nor 'pharyngalization' (in order to distinguish it from lower pharyngalization such as we find in Daghestanian languages; the latter implies moving back the root of the tongue towards the back wall of the pharynx, which produces a quite different acoustic effect).

² In all Eastern Neo-Aramaic dialects "emphatization" (actualized either as ejective

Aharon B. Dolgopolsky

Thus, we have to choose among the following three possibilities (and their combinations) to find out the original actualization of the opposition "emphatic" vs. "non-emphatic":

- uvularized vs. non-uvularized,
- glottalized (ejective) vs. non-glottalized,
- non-aspirated vs. aspirated.

We have three types of evidence to rely upon:

- Structural evidence from the Proto-Semitic phonemic system.
- Diachronic evidence from historically attested Semitic daughter-languages.
- Comparative evidence from other Hamito-Semitic languages, which may suggest the origin of the emphatics in Semitic.

2 The consonantal system of Proto-Semitic may be hypothetically reconstructed as follows:³

	Obstruent consonants			Lateral	Rolled	Nasal	Semivowels (glides)
	Voiced non- emphatic	Voiceless non- emphatic	Em- phatic				
Bilabial	<i>b</i>	<i>p</i>				<i>m</i>	<i>w(y)</i>
Interdental	<i>d</i>	<i>t</i>	<i>ʈ</i>				
Dental:				<i>l</i>	<i>r</i>	<i>n</i>	
stops	<i>d</i>	<i>t</i>	<i>ʈ</i>				
affricates	<i>ʒ(z)</i>	<i>ç(s)</i>	<i>ʧ(ʃ)</i>				
Sibilant ⁴		<i>s(ʃ)</i>					
Lateralized (palatal?)							
affricates		<i>ʤ(ʒ)</i>	<i>ʥ(d)</i>				
Palatal							<i>y(i)</i>
Velar	<i>g</i>	<i>k</i>	<i>ḳ(q)</i>				
Uvular							
fricatives	<i>ɣ(ʕ)</i>	<i>ħ</i>					
Epiglottal		<i>h</i>					
Glottal		<i>h</i>					

glottalization, half-glottalization, or as non-aspiration) is accompanied by a backward movement of the tongue and a recession (backward movement) of the adjacent vowels or of the whole word to which the "emphatic" consonants belong.

³ The traditional notation (when different from ours) is given in brackets. The reasons

In this chart we may note the juxtaposition of "triadic" groups: voiced/voiceless/emphatic: $d/t/\text{ʔ}$, $g/k/\text{ʔ}$. This means that the emphatic consonants do not have the opposition of voice (voiced:voiceless), which is present in the corresponding non-emphatic consonants. If one supposes that the Proto-Semitic "emphasis" is uvularization (as in Arabic), this striking feature cannot be explained, because there is no physical connexion between uvularization and voice production. From the point of view of articulation, uvularization may accompany any kind of consonant and even vowels. In modern Arabic, for example, there is opposition of voice for the uvularized consonants, too ($ḡ/\text{ḡ}$, $ẓ/\text{ẓ}$). The same is true of Berber languages. On the other hand, the glottalization hypothesis does explain the neutralization of voice opposition for the "emphatics" and the triadic opposition of consonants in Proto-Semitic, which is interpreted as opposition of the three main positions of the glottis: open glottis/vibrating vocal cords/closed glottis. The glottalized ejectives cannot be voiced for physical reasons: the glottis cannot be closed and at the same time produce the voice. Therefore the triadic opposition voiced/voiceless/ejective is very typical for those languages which have ejective articulation (Georgian and other Khartvelic languages, Circassian, Abkhaz, some Daghestanian languages, Ethiopian Semitic languages, Kaffa and some other Omotic languages of SW Ethiopia, many Amerindian languages, etc.). The third hypothesis (emphatic = non-aspirated voiceless, non-emphatic voiceless = aspirated voiceless) is equally suitable for explaining the triads. Triadic oppositions $d:t:th$, $g:k:kh$ are well known (Ancient Greek, Armenian, Tibetan, etc.).

This means that the phonemic system of Proto-Semitic provides structural evidence ruling out the uvularization (resp. "velarization", "pharyngalization") hypothesis. Now we must choose only between the two remaining hypotheses (1. $*t = [t']$, $*t = [t]$; 2. $*t = [t]$, $*t = [t^h]$) or their combination ($*t = [t']$, $*t = [t^h]$).

In order to solve this problem we make use of another criterion: that of $*t:*\text{ʔ}$ opposition. In the chart of Semitic consonants we find opposition between $*t$ (> Arabic ط , Hebrew ט , Aramaic ט , etc.) and $*\text{ʔ}$ (> Arabic ع , Hebrew ע , Aramaic ע , etc.). Egyptian borrowings from Old Canaanite suggest that t was a fricative (at least in Old Canaanite):⁵

Semitic $*t\text{algu}$ 'snow' > Egyptian srk 'snow',

for considering the consonants $*c$ (= $*s$), $*c$ ($*s$), $*\text{ʕ}$ ($*z$), $*c$ ($*s$), $*c$ ($*\text{ʔ}$) as affricates should be discussed in a special paper.

⁴ The exact place of articulation is unknown.

⁵ Semitic $*t$ and $*\text{ʔ}$ are rendered by Egyptian fricative t and s , while Semitic $*c$ (= traditional $*s$), $*c$ (= $*s$), $*\text{ʕ}$ (= $*z$), $*c$ (= $*s$) and $*c$ (= $*\text{ʔ}$) are rendered by Egyptian c and ʕ (i.e. by affricates).

Semitic $*a\text{ʔartu}$ 'Astarte' > Egyptian strt 'Astarte',

Semitic $*a\text{ʔlu}$ (or $*i\text{ʔlu}$) 'tamarisk' > Egyptian jsr 'tamarisk'.

Proto-Indo-European borrowings from Proto-Semitic render initial Semitic $*t$ - by Indo-European $*t$, and the medial Semitic $*-t$ - by IE $*-s$ -: Semitic $*tawru$ 'bull' > IE $*tauro-s$, Sem. $*a\text{ʔtar-}$ 'morning star' > IE $*(ha)ster-$ 'star'⁶, which suggests a sound close both to $[t]$ and to $[s]$, i.e. a fricative $[t]$, for Proto-Semitic. Semitic $*-t$ - (in medial position) is also rendered by Indo-European $*-s$ -: Sem. $*hi\text{ʔwu}$ 'arrow' (> Hebrew חץ , Arabic حظوة , Akkadian uṣṣu) > IE $*isu$, $*iswo-s$ 'arrow' (> Old Indian iṣu- , Avestan iṣu- , Greek λόγ)⁷, which seems to suggest a fricative pronunciation of $*t$ in Semitic.⁸

Now if one supposes that the Semitic "emphatic" consonants were non-aspirated as opposed to aspirated, the consonants $*t$ and $*t$ (= $[t^h]$ and $[t]$) will hardly be distinguishable. As far as I know, in no language of the world is there an opposition of aspirated and non-aspirated voiceless interdental fricative (not supported by any other distinction).

On the other hand, an ejective $*t$ (= $[t']$) would be easily distinguishable from non-glottalized $*t$.

This criterion suggests that Proto-Semitic "emphatics" were ejectives.

3 Let us now consider the evidence from the historically attested Semitic languages. Of course, the most valuable information is supposed to be that provided by ancient Semitic languages (which must be closer to Proto-Semitic than modern vernaculars). Their pronunciation must, it is true, be reconstructed. However, as they are attested in written records (especially those vocalized) and contemporary foreign transcriptions, we are here in a better position than when reconstructing a proto-language.

We shall try to reconstruct the pronunciation of "emphatics" in the ancient Semitic languages making use of typological criteria.

TYPOLOGICAL EXPECTATIONS. They are presented in form of a chart (see Chart 1).

DISCUSSION: In this chart we distinguish between strong and weak (or medium-force) glottalization. If the glottalization is weak (as in Circassian or Urmian Nestorian Neo-Aramaic) or of medium force (as in Georgian),

⁶ Cf. V. M. Illič-Svityč, "Drevnejšie indoevropsko-semitskie jazykovye kontakty", *Problemy indoevropskogo jazykoznanija*, Moscow, 1964, pp. 3-12.

⁷ Cf. J. Pokorny, *Indogermanisches etymologisches Wörterbuch*, Bd. I, Bern-München, 1969, p. 301.

⁸ After all, for typological reasons it is hard to assume an interdental affricate (something like $tʃ$) phonemically distinct from t and/or from t , which is not attested, as far as I know, in any language.

the non-glottalized voiceless stops are found to be aspirated. This is due to the necessity for sufficient acoustic distinction between phonemically distinct consonants. On the other hand, strongly glottalized consonants (as the ejectives in Amharic) are distinct enough from their non-glottalized counterparts, so that no aspiration of the latter is required.

As for backward movement (recession) of adjacent vowels, it is an obligatory consequence of uvularization (simply because the position of the tongue is relevant to the quality of the vowels). However, similar recession of vowels sometimes occurs as a consequence of glottalization (just as of other guttural articulations, such as those of ' or h). For instance, such recession-producing influence of glottalization and "laryngeal" (in the broad sense) consonants is found in the Eastern Neo-Aramaic dialects.

But there is a decisive difference between the two cases: uvularization always necessarily influences the adjacent vowels, while glottalization may occur (and in most cases does occur) without producing recession of vowels. This is important for the problem we are discussing.

As for the lenition (fricativization based on relaxation of speech effort), it is not prevented by uvularization of consonants (cf. Berber $q < f$, $g < k$). On the other hand, the oppositions of non-aspirated vs. aspirated and of glottalized vs. non-glottalized consonants have a direct bearing on the possibility of lenition. Glottalized stops practically never undergo lenition⁹, which can be explained by the way they are formed. A glottalized ejective is a two-focused consonant. The two obstructions (one oral and the other glottal) produce a closed cavity in the mouth and in the throat, and the acoustic effect of ejective glottalization is obtained by raising air pressure in this closed cavity (cf. above §1). If the stop has been fricativized, the cavity is no longer closed, and raising air pressure in such a cavity requires *more* muscular effort than in the case of non-fricativized ejectives. Therefore *relaxation* of muscular effort, which causes lenition of voiced and/or voiceless non-glottalized consonants (as in Spanish, Celtic languages, Modern Greek, Berber dialects, Proto-Germanic, Danish, Amharic, in Hebrew and Aramaic ח כ פ ט ד ג ב, etc.), does not produce lenition of glottalized stops.

The aspirated stops are more propitious to lenition than the non-aspirated. We can take as an example the history of Greek, where t^h , k^h and p^h were fricativized into Modern Greek t , x ($= k$), f , but t , k , p never underwent lenition. Another example is the pre-history of Latin (Indo-European $*bh- > f-$, $*dh- > t-$ $> f-$, $*gh- > h-$, but Indo-European $*b-$, $*d-$, $*g-$, $*p-$, $*t-$, $*k-$ remained stops).

⁹ Except for very special cases, such as uvular ejectives ($q > q$ in some Cushitic and Kharthvelian languages, perhaps, $*f > q$ (?) $> '$ in Aramaic), which seem to be due to anatomic peculiarities of the uvula. Cf. also spirantization of intervocalic k in Tigrinya.

The $t - t$ criterion has already been discussed (§2).

If we invert our chart of typological expectations, we obtain a chart of criteria which can help to provide evidence of the actualization of emphatics in ancient Semitic languages (see Chart 2).

Let us apply this chart to the ancient Semitic languages: Old Canaanite (language of the El-Amarna tablets, Canaanite attested in Egyptian loan-words and transcriptions of names, etc.), Hebrew, Ugaritic, Phoenician, Punic, Aramaic (Biblical Aramaic, Targum Aramaic, Syriac), Ancient South Arabian, Ethiopic (Gə'əz), Akkadian (see Chart 3).

We can see that in practically all ancient Semitic languages either the "emphatics" were pronounced as ejectives or traces of such pronunciation are found. The only apparent exception is Arabic, in which the emphatics are actualized as uvularized consonants. But even in Arabic traces of former glottalization are found as well: in Classical Arabic of the 8th century as described by Sibawayhi there was neutralization of voice in the emphatic consonants:

	Emphatic No opposition of voice	Non-emphatic consonants	
		Voiceless	Voiced
Dental	ط	ت	د
Sibilant	ص	س	ز
Interdental	ظ	ث	ذ
Lateralized interdental	ض		
Velar and uvular	ق	ك	(ج)

This neutralization can be explained as a trace of the former glottalization of the "emphatics" (while the alternative "no-aspiration" hypothesis is ruled out because it cannot explain the uvularization effect).

How was ancient glottalization transformed into Arabic uvularization? The route can be traced with the help of Neo-Aramaic dialects which represent practically all stages of such a transition:

1st stage. Glottal articulation causes recession of the "emphatic" consonant and of the adjacent vowels. The "non-emphatic" voiceless counterparts are aspirated and not uvularized (i.e. do not undergo recession). This stage is practically identical with Urmian Nestorian Neo-Aramaic ("Neo-Assyrian") and Kurdistan Jewish Neo-Aramaic (cf. K. G. Cereteli, *Sovre-*

mennyj assirijskij jazyk, Moskva 1964, 19–20; I. Garbell, *The Jewish Neo-Aramaic Dialect of Persian Azerbaijan*, London 1965, 14, 21–22, 33). The only difference is that in Neo-Aramaic the recession effect has spread over the whole word.

2nd stage. The burden of phonemic distinction has moved to the aspiration and the recession as new distinctive features. Glottalization is weakened up to the stage of half-glottalization (the glottis is only slightly opened). This is the stage found in the Jewish Neo-Aramaic of Urmia (Rizaye), Salma, Başkala and Gawar (Yüksekova). Cf. I. Garbell, *op. cit.* esp. p. 33.

3rd stage. Glottalization is lost completely. Emphatics are now distinguished from non-emphatic voiceless consonants as non-aspirated from aspirated and as recessive (and producing recession of adjacent vowels) from non-recessive. This is the situation in Tür-'Abdīn Neo-Aramaic (SE Turkey). Cf. O. Jastrow, *Laut- und Formenlehre des neuaramäischen Dialekts von Midin im Tur 'Abdin*, Bamberg 1967, 2–4, 7, 11–15; A. Siegel, *Laut- und Formenlehre des neuaramäischen Dialekts des Tür 'Abdin*, Hildesheim, 1968.

4th stage. Aspiration as a distinctive feature is also lost, and the emphatics are now distinguished from their non-emphatic counterparts only by the feature of recession (uvularization). This is the situation in Arabic.

Thus the evidence of the historically attested Semitic languages testifies to the fact that the primary pronunciation of emphatics was ejective glottalization.

4 This conclusion is fully confirmed by the analysis of the Hamito-Semitic pre-history of Semitic as evidenced by related languages, especially Cushitic and Chadic.¹⁰ We may compare Semitic emphatic consonants with their etymological counterparts in Cushitic and Chadic, and we shall find there also glottalized consonants: Proto-Cushitic ejective *k̥ (which has remained ejective in Galla, Bayso, Arbore, Galab, Sidamo, Kaffa, Ometo, etc., has moved to a glottalized injective ("implosive")¹¹ in Elmolo, to a uvular q in Somali, Awngi, Iraqw, etc., to the glottal stop in Bedaue), Proto-Cushitic ejective *t̥ (> Sidamo, Hadiya, Kaffa ejective t̥, Galla injective glottalized t̥, Somali injective glottalized retroflex d̥, Saho, Afar, Bedaue retroflex d̥, etc.), Proto-Chadic ejective *k̥ (> Hausa k̥, Angas k̥-, Bolewa k̥, Logone γ, Tera injective glottalized g̥); PCh *k̥- before *l has changed into Margi injective

¹⁰ For lexical items (Cushitic and Chadic etymological counterparts of Semitic roots and words) see A. Dolgopolskij, *Sravnitel'no-istoričeskaja fonetika kušitskix jazykov*, Moskva, 1973; A. Dolgopolsky, "Contributions to the Afroasiatic comparative word list", in *Proceedings of the Sixth Conference on African Linguistics*, Ohio State University WPL 20.42–43; O. Stolbova, *Issledovanie istoričeskoj fonetiki zapadnočadskix jazykov* (Ph.D. thesis, Moscow; to be published).

¹¹ B. Heine, "Vokabulare ostafrikanischer Restsprachen. Teil 1: Elmolo". *Afrika and Übersee* 56, 1973, pp. 276–283.

glottalized palatal (dy). The counterpart of Semitic and Cushitic *t̥ seems to have changed into Proto-Chadic injective *d̥ (d̥ is found in Hausa; Bolewa, Angas, Margi, etc. as the etymological counterpart of Semitic and Cushitic *t̥, while ejective t̥ is unknown to Chadic).

I shall not go here into further details because analysis of Proto-Hamito-Semitic (> Cushitic, Chadic, Berber, Egyptian) emphatic consonants must be the subject of a special study. But in any case, Semito-Cushito-Chadic comparison confirms the general conclusion that the so-called "emphatic" consonants in Proto-Semitic (as in Proto-Hamito-Semitic) are glottalized ejectives.

CHART 1. TYPOLOGICAL EXPECTATIONS

If the emphatics are:	may there be opposition of voice between emphatics? influenced (uvularized, velarized, labialized, opened, etc.)?				are the adjacent vowels the non-emphatic voiceless consonants propitious to lenition (fricativization) than non-emphatic stops?			
	Yes	Yes	No	No	Yes	Yes	No	Yes
1 uvularized consonants,	Yes	Yes	No	No	Yes	Yes	No	Yes
2a weak or medium-force ejectives (i.e. consonants with weak or medium-force ejective are only voiceless glottalization),	No	May be	Yes	Yes	Yes	Yes	Yes	Yes
2b very strong ejectives (consonants with strong ejective glottalization),	No	May be	May be	Yes	Yes	Yes	Yes	Yes
3 non-aspirated voiceless consonants (opposed to aspirated voiceless),	No	No	Yes	Yes	Yes	Yes	No	No

CHART 2.

If we find that:	is it possible to suppose that:				emphatics vs. non-emphatics = non-aspirated vs. aspirated?			
	emphatization = uvularization?	emphatization = weak (or medium-force) ejective glottalization?	emphatization = strong ejective glottalization?	emphatization = strong ejective glottalization?	Yes	No	Yes	No
there is opposition between voiceless emphatics and voiced emphatics,	Yes	No	No	Yes	Yes	No	Yes	No
there is neutralization of voice in the emphatic consonants,	No (or: It was not so in some earlier stage of the same language)	Yes	Yes	Yes	Yes	No	Yes	No
adjacent vowels undergo recession (uvularization, velarization, etc.), opening and/or labialization,	Yes	Yes (It may occur)	Yes (It may occur)	Yes	Yes	No	Yes	No
adjacent vowels are not influenced by the emphatics (esp. do not undergo recession),	No	Yes	Yes	Yes	Yes	No	Yes	No
non-emphatic stops are aspirated (while the emphatics are not),	No	Yes	Yes (It may occur)	Yes	Yes	No	Yes	No
non-emphatic stops are not aspirated,	Yes	No	Yes	Yes	Yes	No	Yes	No
the emphatics are not fricativized (while their non-emphatic counterparts are),	No	Yes	Yes	Yes	Yes	No	Yes	No
there are phonemes / and /,	Yes	Yes	Yes	Yes	Yes	No	Yes	No

CHART 3.

1	2	3	4	5	6	7	8
	Is there neutralization of voice in the emphatics?	Is there recession of adjacent vowels?	Is there aspiration of non-emphatic voiceless stops?	Is there lenition of non-emphatic voiceless stops (while the emphatics do not undergo lenition)?	Are / and / maintained as distinct fricative phonemes?	Possible pronunciation of the emphatics (taking into account the internal evidence presented in columns 2-6)	Possible pronunciation of the emphatics (taking into account also the diachronic evidence from the earlier and later stages of the same language)
Old Canaanite	+	-1	?	?	+2	Ejective glottalization	Ejective glottalization
Hebrew	+	-3	+4	+5	-	Ejective glottalization or non-aspiration	Ejective glottalization ⁶
Ugaritic	+(?)	-7	?	?	+8	Ejective glottalization	Ejective glottalization
Phoenician	+	-9	+(?) ¹⁰	?	-	Ejective glottalization ¹¹	Ejective glottalization
Punic	+	-12	+12	+(?) ¹³	-	Ejective glottalization or non-aspiration	Ejective glottalization or non-aspiration
Old Aramaic & Syriac	+	-14	+4	+5	-	Ejective glottalization or non-aspiration	Ejective glottalization ¹⁵
Ancient South Arabian	+16	?	?	-16	+17	Ejective glottalization	Ejective glottalization ¹⁸
Ethiopic	+	-19	-20	-	-	Ejective glottalization	Ejective glottalization ²¹
Akkadian	+	+	?	?	-	Ejective glottalization or traces of former glottalization: non-aspiration plus slight vowel recession	Ejective glottalization or traces of it

NOTES TO THE CHART 3:

¹ According to Akkadian transcription of Canaanite names. Cf. F. Böhl, *Die Sprache der Amarnabriefe mit besonderer Berücksichtigung der Kanaanismen*, Leipzig, 1909; K. Beyer, *Alt-hebräische Grammatik*, Göttingen, 1969, pp. 22-30.

² Canaanite / is kept distinct from /, as evidenced by the Akkadian transcriptions of Amarna tablets (cf. Z. Harris, *Development of the Canaanite Dialects*, New Haven, 1939, pp. 62-64). Canaanite / is still kept different from / in the most ancient Greek transcriptions of proper names: *Tūru* "Tyre" > *Tūpos*, *Sidonu* "Sidon" > *Σιδών*.

³ As evidenced by Tiberian, Babylonian and Palestinian vocalizations, as well as by foreign transcriptions of Hebrew words (in the Septuagint, Origen's Hexapla, etc.).

⁴ As attested by Greek transcriptions: *n*, *ɔ* are rendered by *θ*, *χ*, while *ɛ* and *ɸ* are rendered by *τ* and *κ*.

⁵ It is very important to note that lenition of post-vocalic non-geminated stops is limited to the non-emphatic consonants: *t* > *θ*, *k* > *χ*, *p* > *φ*, *d* > *δ*, *g* > *γ*, *b* > *β*, but *f* and *q* remain occlusive in all positions.

⁶ It seems more probable that Hebrew emphatics were ejectives (and not simply non-aspirated consonants), because they were ejectives both in the pre-history of Hebrew (i.e., in Old Canaanite) and in the traditional Hebrew pronunciations of Georgian and Kurdistan Jews (and to some extent in that of Tat-speaking Jews). On the other hand, no Jewish community has the system "emphatic = non-aspirated, non-emphatic = aspirated" without traces of earlier glottalization.

⁷ At least no traces of such vowel recession are found in the Akkadian transcription of Ugaritic names and in the Sumerian-Akkadian-Hurrian-Ugaritic cuneiform glossary (cf. J. Nougayrol, in *Ugaritica V*, Paris, 1968, pp. 230-251, 351 f.).

⁸ Only in earlier Ugaritic. Later / merged with *γ*.

⁹ At least no traces of vowel recession are found in the Greek transcriptions of Phoenician texts, words and proper names and in the Greek borrowings from Phoenician. Cf. E. Masson, *Recherches sur les plus anciens emprunts sémitiques en grec*, Paris, 1967.

¹⁰ Phoenician non-emphatic voiceless stops *n*, *ɔ* are often rendered by Greek *τ*, *κ* (along with *θ*, *χ*): *kaṭṭn* > *κατῶν*, *kiṭṭn* > *κιτῶν*, *maḭk* > *μιλλκ*, *miḭχ*. Perhaps the aspiration was weak — weaker than in Greek. But it is improbable that there was no aspiration at all, because without Phoenician aspiration Greek rendering of *n*, *ɔ* by *θ*, *χ* cannot be explained.

¹¹ The opposition emphatic/non-emphatic could not be actualized as non-aspirated/aspirated because the aspiration was by no means strong (it was in many cases not even perceived by Greeks).

¹² According to Latin and Greek transcriptions of Punic texts, words and proper names.

¹³ At least *p* > *f* (according to contemporary Latin transcriptions).

¹⁴ According to Tiberian, Babylonian and West Syriac vocalizations of Jewish Aramaic and Syriac texts.

¹⁵ Glottalization has been preserved in several Neo-Aramaic dialects (cf. §3).

¹⁶ This is evidenced by Modern South Arabian languages (Soqotri, Mehri, Šhari).

¹⁷ There were letters for / and / in the Ancient South Arabian alphabet. Their interdental (or fricative resp. affricate non-sibilant dental) pronunciation is confirmed by comparative evidence from the daughter-languages:

Soqotri	Mehri	Šhari	Ethiopic (Gə'əz)	Ancient South Arabian
t	f	f	s	f
t	ɸ	ɸ	ɸ	f

A phoneme which becomes *t* in one language, *s* in another one and *f* in a third and which does not coincide with *f*, *s*, and *t*, must have been close both to [t] and [s] and nevertheless distinct from them. These requirements are best fulfilled by *f*. The same is true (mutatis mutandis) of *f*.

¹⁸ This is confirmed by evidence from the daughter-languages: in Ethiop-Semitic languages the emphatics are strongly glottalized, and in some modern South Arabian vernaculars (incl. Mehri) weak glottalization has been recently discovered by T. M. Johnstone.

¹⁹ As confirmed by the Ethiopian script and the traditional pronunciation of Gə'əz (cf. E. Mittwoch, *Die traditionelle Aussprache des Äthiopischen*, Berlin, 1926).

²⁰ In modern Ethiop-Semitic languages aspiration of non-emphatics is either weak or non-existent.

Emphatic Consonants in Semitic

²¹ It is confirmed by modern Ethiosemitic languages, which have preserved strong glotalization of all emphatics. This fact cannot be explained by a Cushitic substratum (as some scholars believe), because that particular language (Agaw) which was the substratum of Ethiopian Semitic did not possess *t* (Proto-Cushitic **t* > Agaw *d*, cf. A. Dolgopolskij, *Sravnitel'no-istoričeskaja fonetika kušitskix jazykov*, Moskva, 1973, pp. 54–59, 248–252, 323, 330).

²² Cf. W. von Soden, *Grundriss der akkadischen Grammatik*, Roma, 1952: "... *a* vor *r* nach... emphatischem Laut wurde ass. offenbar oft als offenes *o* gesprochen: vgl. geschriebenes *qurbum* statt *qarbum* (sprich *qorbum*) schon aA [= altassyrisch] und geschriebenes *u* statt *a* in manchen Verbalformen wie... *t-na-šur* 'er wacht' neben *t-na-šar* u. a. m.... Wie *a* wurde auch *u* unter ähnlichen Bedingungen anscheinend oft als offenes *o* gesprochen: so weist mA [= mittelassyrisch] *šu-šar* 'schreibe' auf *šur*" (p. 12).